

Notice of Allowability	Application No.	Applicant(s)	
	10/735,046	FROLOV ET AL.	
	Examiner	Art Unit	
	Michael D. Burkhart	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment of 1/14/2005.
2. ☒ The allowed claim(s) is/are 1-3,5,6,8-10,12,13 and 15-18.
3. ☒ The drawings filed on 14 January 2005 and 12-12-2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>4/5/2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Benjamin Adler on 4/5/2005.

The application has been amended as follows:

In the claims:

5. (currently amended) The method of claim 1, wherein sequences encoding said capsid protein and glycoproteins are ~~derived~~ from an alphavirus selected from the group consisting of Sindbis virus, Venezuelan Equine encephalitis virus, Ross River virus, and Semliki Forest virus.

8. (currently amended) A method of generating ~~Sindbis virus replicons containing~~ viral particles containing Sindbis virus replicons for production of recombinant protein, comprising the steps of:

(a) transfecting a first group of cells with (i) a Sindbis virus replicon comprising a sequence encoding a heterologous protein and a sequence encoding a nonstructural protein nsP2 that comprises an amino acid selected from the group consisting of proline, leucine, glycine, and valine at amino acid position 726; (ii) a first helper RNA comprising a sequence encoding an alphavirus capsid protein and cis-acting elements that allow efficient replication and packaging

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of said first helper RNA and (iii) a second helper RNA comprising a sequence encoding the alphavirus glycoproteins E1 and E2 and cis-acting elements that allow efficient replication and packaging of said second helper RNA;

(b) obtaining a primary stock of viral particles comprising (i) viral particles containing said Sindbis virus replicons comprising a sequence encoding said heterologous protein, (ii) viral particles containing said first helper RNA, and (iii) viral particles containing said second helper RNA;

(c) infecting a second group of cells with said primary stock of viral particles at high multiplicity of infection;

(d) obtaining a secondary, larger stock of viral particles comprising (i) viral particles containing said Sindbis virus replicons comprising a sequence encoding said heterologous protein, (ii) viral particles containing said first helper RNA, and (iii) viral particles containing said second helper RNA, wherein said secondary stock has a titer of packaged replicons of at least 1×10^8 infectious units/ml; and

(e) infecting host cells with the viral particles of (d) to produce said heterologous protein encoded by said packaged replicons.

12. (currently amended) The method of claim 8, wherein sequences encoding said capsid protein and glycoproteins are ~~derived~~ from an alphavirus selected from the group consisting of Sindbis virus, Venezuelan Equine encephalitis virus, Ross River virus, and Semliki Forest virus.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Burkhart whose telephone number is (571) 272-2915. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel can be reached on (571) 272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael D. Burkhart
Examiner
Art Unit 1636


DAVID GUZO
PRIMARY EXAMINER